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## Civil Aircraft Production For 1940 Up 81% Over 1939

### Output of Airline-Type Planes Increases 114%; Trend to Heavier Engines in Light-Plane Category

Secretary of Commerce Jesse H. Jones has announced that according to statistics compiled by the Civil Aeronautics Administration 6,748 civil aircraft were produced in the United States during the year 1940, an 81 percent increase over the 3,715 produced in 1939.

Mr. Jones noted two important trends in the type of aircraft currently being manufactured for civilian use in this country:

1. The air transport industry is turning more and more to the larger multiengine plane with facilities for carrying 21 passengers and above. In 1940, 118 of these were put into service, an increase of 114 percent over 1939 when 55 were produced.

During the same period only 29 of the types carrying less were built for the domestic airlines.

2. In single-engine aircraft for private and nonscheduled commercial flying, the trend for the past year has been upward from the lightest and lowest-power classes toward aircraft weighing more than 1,300 pounds and having engines of from 51 to 100 horsepower. This type carries two or more persons.

During the 12-month period, 978 of these were built and sold as against 456 in 1939. Interestingly enough, the percentage of increase in this category is identical with the transport figure—114 percent.

The one- and two-place light plane continued to show a high production total but the sharpest gains were registered in the classes described above, the multimotored transports and the three-to-five place single-engine planes which are becoming increasingly popular throughout the country for private and sports flying.

Grouped according to engine horsepower, the production figures show even more forcibly that the current trend in the field of private flying is toward heavier and more powerful aircraft than obtained in previous years when the small plane with an engine installation of 50 horsepower or under topped the lists. The output in 1940 of aircraft of 50 horsepower and under decreased 80 percent, while those in the 51-70 and 71-100 horsepower classifications increased 238 and 235 percent, respectively.

In the 101-165 horsepower class, the increase was 51 percent, but in the next higher category, engines of from 166 to 225 horsepower—which includes the type of airplane being used by the C. A. A. for secondary training work in the Civilian Pilot Training program—the increase was the highest ever recorded, 3,812 percent on single engine planes and 1,400 percent on multiples. The unit figures were 8 single engine types produced in 1939, and 313 in 1940,

and whereas only a single multiengine airplane powerplant, an engine in the 166-225 horsepower rating was built in 1939, 15 were produced in 1940.

Multiengine planes having engine installations from 601 to 1,800 horsepower, which include the airline transports, increased 88 percent in the same period.

Following are statistics showing the domestic civil aircraft production for 1940 compared with 1939: Table I shows production by types, table II shows production by engine power, and table III shows production by weight and engine classification.

(See Tables on page 79.)

## 4,813 C. P. T. P. GRADS ACCEPTED FOR DUTY IN ARMY AND NAVY

By March 1st, 4,813 graduates of the C. A. A.'s Civilian Pilot Training Program had volunteered and been accepted by the Army and Navy air services, according to a statement by Robert H. Hinckley, Assistant Secretary of Commerce.

Almost as important as the student pilots, Mr. Hinckley added, are the 941 flight instructors, trained in the C. A. A. program, who have left it to supply trained manpower to a variety of defense efforts.

The 4,813 total represents more than 11 percent of the students who have completed the CPT preliminary training and approximately one-fourth of the total number trained in the secondary phase of the Civilian Pilot Training Program.

"They are impressive figures when one considers that the great majority of the

(See C. P. T. P. GRADS, page 80.)



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## C. P. T. Students To Skip Navy Elimination Stage

The Navy Department has directed that all applicants selected for flight training from among graduates of the Civilian Pilot Training Program's secondary course skip the usual elimination training.

Those selected, upon reporting for duty at Naval Reserve Aviation bases, will be given naval indoctrination and a course of instruction for a period of approximately a month. After completion, their transfer to a Naval Flight Training Center will be authorized by the Bureau of Navigation within quotas allowed for such personnel.

They will then be appointed aviation cadets and will enter upon training in the course at a stage approximating the end of the 23-hour solo period of Squadron 1.

# January Air Fatalities Total 12 Compared with 13 in December

## Report Includes Airline Crash at St. Louis

Twelve fatal accidents were reported for United States civil aviation during January 1941, one of these involving a passenger riding with a student pilot, contrary to the Civil Air Regulations, the Civil Aeronautics Board reported today.

The monthly total includes a domestic scheduled air-carrier accident January 23 at St. Louis, Mo. The January total compares with 5 in the corresponding month of 1940 and with 13 in December.

In connection with the nonair carrier, or private flying, accidents the Board noted that fatal accidents resulting from student pilots carrying passengers occur at the rate of at least one a month. And, it pointed out, carelessness sounded a fatal note last month when one accident due to fuel exhaustion was reported.

While scheduled air-carrier operations contributed one accident to the

month's total, United States domestic airliners carried about 200,000 revenue passengers and flew over \$5,500,000 revenue miles during January, according to the Board's estimate.

[Individual Accident Reports]

## LOW-ALTITUDE STALL FATAL TO TWO

A stall at low altitude caused the crash near Berwick, Pa., on June 9, 1940, in which Commercial Pilot Lee Fahringer and his passenger, Luther M. Young, were fatally injured.

Pilot Fahringer, who had logged 205 hours, took off from the Berwick airport with his passenger for a local pleasure flight. About 15 minutes later the airplane was observed flying low and circling a farm situated a few miles south of Berwick. Two shallow turns to the right had been executed and the airplane was headed in a westerly direction at an altitude of about 200 feet

(See ACCIDENT REPORTS, page 80.)

# Manufacturing and Production

## Aircraft Radio Equipment Approved

During the last 2 months of 1940, the following units of aircraft radio equipment were approved by the Civil Aeronautics Administration for scheduled air-carrier use and issued type certificates:

Certificate No.	Manufacturer	Unit	Date
272	Pan American Manufacturing & Supply Corporation.	AM-50 aircraft modulator.....	Nov. 26
425	Bendix Aviation Ltd.	Model 3723 control panel.....	Nov. 28
426	do	Model 3409-R first officer's jack box.....	Do.
427	do	Model 3409-L captain's jack box.....	Do.
444	RCA Manufacturing Co., Inc.	AVA-56A loop antenna (remote control and adaptor kit).....	Nov. 1
530	Northwest Airlines Inc.	AR-200 control unit.....	Nov. 18
541	Transcontinental and Western Air Inc.	Type 125 fixed antenna tuning unit.....	Nov. 5
340	Lear Avia Inc.	2419-A shock mount base.....	Dec. 30
428	Bendix Aviation Ltd.	Model 3719 control panel.....	Dec. 16
429	do	Model 3721 sensitivity control.....	Do.
472	Bendix Radio Corporation.	MN-36A loop.....	Dec. 2
473	do	MN-37A bearing indicator.....	Do.
474	do	MN-26H radio compass.....	Do.
475	do	MN-28E remote control.....	Do.
471	do	MN-31A automatic loop control.....	Do.
551	do	MN-31B automatic loop control.....	Do.
560	do	RTA-1A communications unit.....	Dec. 12
561	do	MP-31A power unit.....	Do.
563	do	MS-30A 10-channel control unit.....	Dec. 11
565	do	MT-68B mounting base.....	Do.
566	do	MT-68C mounting base.....	Do.
521	Eastern Air Lines	CES-235A radio control unit.....	Dec. 31

The following authorized modifications to type certificates approving aircraft radio equipment for scheduled air-carrier use were issued during the same period:

Type certificate	Data sheet	Unit and modification	Modification authorized
<b>RCA MANUFACTURING COMPANY</b>			
123	72A	AVR-7D RECEIVER. Addition of adaptor parts of the RCA AVA-51A loop adaptor kit to the receiver to permit operation as an aural-null direction finder receiver.	Nov. 8
124	73A	AVR-7E RECEIVER. Addition of adaptor parts of the RCA AVA-51A loop adaptor kit to the receiver to permit operation as an aural-null direction finder receiver.	Nov. 8
125	74A	AVR-7F RECEIVER. Addition of adaptor parts of the RCA AVA-51A loop adaptor kit to the receiver to permit operation as an aural-null direction finder receiver.	Nov. 9
126	75A	AVR-7G RECEIVER. Addition of adaptor parts of the RCA AVA-51A loop adaptor kit to the receiver to permit operation as an aural-null direction finder receiver.	Nov. 12
332	216F	MK-1 AUTOMATIC RADIO DIRECTION FINDER RECEIVER PART NO. 643665. Miscellaneous revisions of circuit constants and arrangements to improve functional operation of the equipment, i. e., reduce noise level, increase stability, improve AVC characteristics et cetera.	Nov. 4
440	306B	AVR-7H RECEIVER. Change the range of the broadcast band from 495-1400 kilocycles to 600-1750 kilocycles, and provide a corrected tuning dial.	Nov. 6
440	306C	AVR-7H RECEIVER. Addition of adaptor parts of the RCA AVA-51A loop adaptor kit to the receiver to permit operation as an aural-null direction finder receiver.	Nov. 18
445	330A	MK-1 AUTOMATIC RADIO DIRECTION FINDER RECEIVER PART NO. 644490. Miscellaneous revisions of circuit constants and arrangements to improve functional operation of the equipment, i. e., reduce noise level, increase stability, improve AVC characteristics et cetera.	Nov. 1
<b>WESTERN ELECTRIC COMPANY, INC.</b>			
62	20E	14-B RECEIVER. Minor mechanical and electrical changes to correct mechanical irregularities and improve electrical stability.	Nov. 25
64	22A	12-D RECEIVER. Provide dual audio output channels and minor circuit changes to increase operating efficiency.	Nov. 25
65	26A	D-98647 RECEIVER. Provide dual audio output channels and minor circuit changes to increase operating efficiency.	Nov. 25
<b>BENDIX RADIO CORPORATION</b>			
500	354-A	RTA-1A COMMUNICATIONS UNIT. Add a potentiometer to provide means of setting the receiver sensitivity to a predetermined level. Modify the wiring to a potentiometer to be used as a modulation level control instead of an interphone level control. Provide transmission marking pulses for the flight analyzer. Remove the internal microphone current supply.	Dec. 13
<b>RCA MANUFACTURING COMPANY, INC.</b>			
215	106-B	AVT-15 TRANSMITTER. Addition of condensers and resistors and minor circuit modifications to provide (a) improvement in hash filters and provide means of adjusting receiver plate voltage when the RCA AVR-20 receiver takes its power supply from the transmitter system (b) to prevent operation of the transmitter on the second harmonic of the crystal, and to provide fundamental frequency operation in the range 2500-6700 kilocycles	Dec. 5
216	154-B	AVT-15A TRANSMITTER. Addition of condensers and resistors and minor circuit modifications to provide (a) standardization of manufacturing processes of the AVT-15 and AVT-15A transmitters (b) prevent operation of the transmitter on the second harmonic of the crystal, and to provide fundamental frequency operation in the range 2500-6700 kilocycles.	Dec. 5
<b>PAN AMERICAN MANUFACTURING &amp; SUPPLY CORPORATION</b>			
271	295-A	75AX-2 TRANSMITTER. Changes in circuits and components to provide for radiotelephone operation and to improve continuous wave and modulated continuous wave functional operation of the transmitter. Adapt the transmitter for 12-24-volt operation by alterations in filament circuit distribution.	Dec. 11
<b>LEAR AVIA, INC.</b>			
344	246-C	ADF-7 AUTOMATIC RADIO DIRECTION FINDER. Miscellaneous mechanical and electrical modifications to improve operational reliability, consisting of relocation of plugs, receptacles, shock mounts, et cetera.	Dec. 10
345	327-A	ADF-8 AUTOMATIC RADIO DIRECTION FINDER RECEIVER. Miscellaneous mechanical and electrical changes to improve operational and functional reliability by installation of a relay to silence receiver during band switching, improve electrical characteristics of IF circuits and improve mechanical linkage for loop rotation.	Dec. 26

## Civil Aircraft Production

(Continued from page 77.)

Table I.—By Types

	1940	1939	Percent of increase or decrease
Landplanes:			
1-2 place:			
Single engine	5,542	3,114	+77.97
Multie engine	2	4	-50.00
3-5 place:			
Single engine	978	456	+114.47
Multie engine	16	9	+77.78
6-17 place:			
Multie engine	29	21	+38.09
21 place and over:			
Multie engine	118	55	+114.55
Seaplanes:			
Single engine	17	43	-60.47
Multie engine	0	8	-100.00
Amphibians:			
Single engine	1	0	
Multie engine	1	5	-80.00
Total single engine	6,538	3,613	+80.96
Total multie engine	166	102	+62.75
Unclassified	44	0	
<b>Total</b>	<b>6,748</b>	<b>3,715</b>	<b>+81.64</b>

Table II.—By Engine Horsepower

	1940	1939	Percent of increase or decrease
50 H. P. and under:			
Single engine	335	1,684	-80.11
Multie engine	1	2	-50.00
51-70 H. P.:			
Single engine	4,569	1,349	+238.70
Multie engine	0	0	
71-100 H. P.:			
Single engine	1,043	311	+235.37
Multie engine	0	0	
101-165 H. P.:			
Single engine	180	119	+51.26
Multie engine	0	1	-100.00
166-225 H. P.:			
Single engine	313	8	+3,812.50
Multie engine	15	1	+1,400.00
226-300 H. P.:			
Single engine	36	82	-56.10
Multie engine	0	4	-100.00
301-400 H. P.:			
Single engine	61	54	+12.96
Multie engine	14	22	-36.36
401-1800 H. P.:			
Single engine	1	6	-83.33
Multie engine	136	72	+88.89
Total single engine	6,538	3,613	+80.96
Total multie engine	166	102	+62.75
Unclassified	44	0	
<b>Total</b>	<b>6,748</b>	<b>3,715</b>	<b>+81.64</b>

Table III.—By Weight and Engine Classifications

	1940	1939	Percent of increase or decrease
Class I (not more than 1,300 pounds)	4,455	3,029	+47.08
Class IIS (1,300-4,000 pounds single engine)	2,017	526	+283.46
Class IIIM (1,300-4,000 pounds multie engine)	2	3	-33.33
Class IIIS (4,000-10,000 pounds single engine)	66	56	+17.86
Class IIIM (4,000-10,000 pounds multie engine)	28	26	+7.69
Class IVS (10,000-25,000 pounds single engine)	0	2	-100.00
Class IVM (10,000-25,000 pounds multie engine)	126	61	+106.56
Class V (gross weight in excess of 25,000 pounds)	10	12	-16.67
Unclassified	44	0	
<b>Total</b>	<b>6,748</b>	<b>3,715</b>	<b>+81.64</b>

# Airways and Airports

## Certification of "True Lights" in Progress

By February 28 the Civil Aeronautics Administration had issued 83 Air Navigation Facility Certificates granting authority to operate 114 "true lights."

A "true light" is any rotating or flashing illuminated beacon or combination of such beacons similar to those operated along the civil airways by the Administrator of Civil Aeronautics which is established, maintained, exhibited, or operated as an aid to air navigation. All such lights should conform to the standards set forth in the *MANUAL ON TRUE LIGHTS*, dated October 1, 1940.

Air Navigation Facility Certificate No. 1 was issued on January 23, 1941, to the Delta Air Corporation on the "true light" which identifies Selman Field, at Monroe, La. This beacon is operated nightly from sunset to sunrise and possesses the clear and green characteristic which identifies the landing area as being suitable, and adequately marked by boundary lights which are in operation nightly from sunset to sunrise.

Air Navigation Facility Certificate No. 2 was issued on January 23, 1941, to the Savannah Broadcasting Co., of Savannah, Ga., on the hazard beacon marking the 285-foot tower of the antenna system serving Radio Station WTOG.

The first landmark beacon to be certified under this program is owned and operated by the Yukon Mill & Grain Co., Yukon, Okla. This beacon is recognized as an aid to air navigation in providing a directional course to the Oklahoma City Municipal Airport.

A certificate issued to the Virginia Electric & Power Co. recognizes the hazard beacon identifying a transmission line owned by that company which crosses the James River south of Richmond, Va.

After July 1, 1941, it will be unlawful to operate a "true light" without the authority granted by appropriate Air Navigation Facility Certificates. All owners and operators of such lights, therefore, are urged to apply for such certification of their facilities as soon as possible. Application forms may be obtained from any regional office of the Administration.

The excellent cooperation of operators of such lights is evidenced by the number of certificates issued to date. Any other operators of lights who are interested may obtain the *MANUAL ON TRUE LIGHTS* from the Publications and Statistics Division, Civil Aeronautics Administration, Washington, D. C.

## California Airway Contract Awarded

The contract for installing lighting facilities along the 340-mile Los Angeles-San Francisco Coastal Airway has been awarded by the Civil Aeronautics Administration to M. C. Laake Co., Brownsville, Tex.

The work to be done, in general, consists of clearing sites, erecting towers, and installing beacons, and at one site erecting power shed and installing generator and fuel tank. The towers will be located at 15 sites, and will be from 51 to 75 feet in height.

## Air Navigation Facilities on March 1, 1941

### AIRPORTS

Municipal airports <sup>1</sup> .....	791
Commercial airports <sup>2</sup> .....	512
Civil Aeronautics Administration intermediate fields <sup>3</sup> .....	287
Army airdromes <sup>4</sup> .....	69
Naval air stations <sup>5</sup> .....	22
Marked auxiliary fields <sup>6</sup> .....	468
Private fields <sup>7</sup> .....	137
Miscellaneous government.....	32
<b>Total.....</b>	<b>2,318</b>

### Airports and landing fields having any night-lighting equipment:

Municipal.....	319
Commercial.....	97
Intermediate.....	286
Army.....	34
Navy.....	14
Auxiliary.....	19
Private.....	8
<b>Total.....</b>	<b>777</b>

### SEAPLANE BASES

Army, Navy, Coast Guard.....	297
Other seaplane bases and anchorages.....	30
<b>Total.....</b>	<b>327</b>

### Seaplane bases having any night-lighting equipment:

Navy and Coast Guard.....	5
Other bases and anchorages.....	10
<b>Total.....</b>	<b>15</b>

### RADIO AIDS

Ranges..... 283 (2 in Hawaii, 6 in Alaska)	
Range stations simultaneous, with voice..... 191 (2 in Hawaii, 6 in Alaska)	
Range stations nonsimultaneous, with voice.....	82
Range stations, no voice.....	10
Broadcast stations..... 116 (2 in Hawaii, 9 in Alaska)	
Broadcast stations, simultaneous.....	113
Broadcast stations, nonsimultaneous..... (3) Alaska	
Marker stations.....	42
Fan markers.....	107
Voice (only) stations..... 13 (7 in Alaska)	
Z markers (not at range stations).....	2

<sup>1</sup> Municipally operated, servicing available.

<sup>2</sup> Privately operated, servicing available.

<sup>3</sup> Operated by C. A. A., no servicing available.

<sup>4</sup> Army operated, open to service planes only.

<sup>5</sup> Navy operated, open to service planes only.

<sup>6</sup> Limited area, no servicing.

<sup>7</sup> Privately operated, no servicing.

## Accident Reports

(Continued from page 78.)

when it stalled and fell off to the ground in an incipient right spin. The aircraft, an American Eagle 101, powered by an OX 5, 90-horsepower engine, was demolished. Inspection of the wreckage did not indicate that structural failure had occurred in flight. The airplane was equipped with fully functioning dual controls.

**Probable Cause.**—Pilot stalled the aircraft at low altitude.

## FLIGHT INTO STORM AREA ENDS FATALLY

A flight undertaken in adverse weather conditions ended in fatal injuries to uncertificated Pilot Gene Armbrust and serious injuries to his passenger, Burch Edwards, near Good Hope, Ohio, on June 7, 1940.

Pilot Armbrust invited Edwards to accompany him as a passenger on a local flight near Good Hope in an uncertificated aircraft, a Cardinal C-2 powered by a LeBlond 5 D. The pilot took-off into the wind and headed toward a storm squall which was clearly visible from the point of take-off. The aircraft had attained an altitude of approximately 700 feet following take-off over a point approximately 1 1/4 miles distant when the aircraft was observed to make a steep 180° turn. Thereafter, the aircraft settled rapidly in a left-wing-low attitude until it struck the ground and was demolished. The pilot had no recorded flying experience.

**Probable Cause.**—Action of the pilot in undertaking a flight in adverse weather conditions.

## C. P. T. P. Grads

(Continued from page 77.)

boys who have taken the Civilian Pilot Training are still in college completing their studies," said Mr. Hinckley. "These boys are not available to the armed forces, as a matter of national policy, unless they choose to volunteer. They are deferred until the end of the school year in the draft.

"Yet this remarkable number of volunteers simply confirms our belief that as we build up the backlog of pilot material, more and more of our trainees will flow into the air services.

"The Army's figures on cadets who started their primary stage in the January class showed that about one out of five were CPT trainees.

"Despite the fact that our instructors are leaving in such large numbers there will be no shortage," said Mr. Hinckley, "as we are constantly training others to take their places. We are building up a reservoir on which the armed forces and the air lines can continue to draw for trained personnel."

To date, 37,277 pilots have successfully completed the CPT student courses, 3,911 of them in the secondary phase. A total of 2,063 instructors have been given refresher courses.



## CIVIL AERONAUTICS BOARD

# OFFICIAL ACTIONS

### Abstracts of Opinions, Orders, and Regulations

FOR THE PERIOD FEBRUARY 15-28, 194

#### ORDERS

ORDER No. 883: *Denied petition of Inland Air Lines for reconsideration of opinion and order No. 796.*

The Board on February 18 denied petition of Inland Air Lines, Inc., for rehearing, reargument, or reconsideration of the opinion and order of the Board (order serial No. 796) issuing to Western Air Express Corporation a certificate of public convenience and necessity authorizing air transportation between Great Falls, Mont., and Lethbridge, Alberta, Canada.

ORDER No. 884: *Denied petition of Dixie Airlines requesting that order No. 869 be stayed.*

The Board on February 18 denied petition of Dixie Airlines, Inc., requesting that the order of the Board (order serial No. 869) be stayed insofar as it authorizes the issuance of a certificate of public convenience and necessity to Pennsylvania-Central Airlines Corporation authorizing air transportation between Pittsburgh, Pa., and Birmingham, Ala.

ORDER No. 885: *Pan American authorized to transport officials of British Government.*

The Board on February 19 authorized Pan American Airways Co. (Del.) to transport three officials of the British Government from Lisbon, Portugal, to Port of Spain, Trinidad, subject to space available.

ORDER No. 886: *City of Los Angeles permitted to intervene in the application of Pan American.*

The Board on February 19 granted city of Los Angeles permission to intervene in the application of Pan American Airways, Inc., for a certificate of public convenience and necessity authorizing air transportation between Los Angeles, Calif., and Mexico City, Mexico.

ORDER No. 887: *Student pilot certificate of Harold J. Yench revoked.*

The Board on February 21 revoked student pilot certificate No. S-42334, held by Harold J. Yench, St. Paul, Minn., for piloting an aircraft carrying

#### Printed Opinions Available

Opinions of the Civil Aeronautics Board in economic cases which are now available in printed form are as follows:<sup>1</sup>

No. 1—Docket No. 315; *Acquisition of Marquette by TWA*; July 3, 1940.

No. 2—Docket No. 238; *American Export Airlines, Inc.—Certificate of Public Convenience and Necessity*; July 12, 1940.

No. 3—Docket No. 403; *Eastern Air Lines, Inc.—Autogiro Service—Philadelphia, Pa.*; July 16, 1940.

No. 4—Docket No. 3-401 (B)-1—*Mid-Continent Airlines, et al.—Certificates of Public Convenience and Necessity*; July 18, 1940.

No. 5—Docket Nos. 379 and 409; *Northwest Airlines, Inc.—Amendment of Certificates of Public Convenience and Necessity*; July 18, 1940.

No. 6—Docket No. 38-401-E-1; *Pan American-Grace Airways, Inc.—Certificate of Public Convenience and Necessity*; July 22, 1940.

No. 8—Docket No. 27-401 (E)-1; *Panama Airways, Inc.—Certificate of Public Convenience and Necessity*; July 22, 1940.

No. 9—Docket No. 363; *All American Aviation, Inc.—Certificate of Public Convenience and Necessity*; July 22, 1940.

All opinions must be ordered from the Superintendent of Documents, Government Printing Office, Washington, D. C. Price for each opinion is 5 cents. Include opinion serial number, docket number, and title when ordering. As new opinions become available, notice will be carried in this section of the CIVIL AERONAUTICS JOURNAL.

<sup>1</sup> No. 7—Docket No. 14-401 (E)-1; *Pan American Airways, Inc.—Certificate of Convenience and Necessity*; July 22, 1940, is not yet available.

a passenger who occupied a control seat while the dual controls were connected and operative, in violation of the Civil Air Regulations.

ORDER No. 888: *Student pilot certificate of Roy Brister McCorkle revoked.*

The Board on February 21 revoked student pilot certificate No. S-55732, held by Roy Brister McCorkle, Conway, Ark., for piloting an aircraft over a congested area at an altitude of approximately 200 feet, and other violations of the Civil Air Regulations.

ORDER No. 889: *Private pilot certificate of George W. Cottrell revoked.*

The Board on February 21 revoked private pilot certificate No. 40015, held by George W. Cottrell, Parkersburg, W. Va., for piloting an aircraft carrying passengers for hire in violation of the Civil Air Regulations.

ORDER No. 890: *Student pilot certificate of Miner E. Pike revoked.*

The Board on February 21 revoked student pilot certificate No. S-225976, held by Miner E. Pike, Grand Rapids, Mich., for piloting an aircraft on a civil airway and landing while the weather was below the minimums required for contact flight, and other violations of the Civil Air Regulations.

ORDER No. 891: *Student pilot certificate of Juan Alberto Wirshing revoked.*

The Board on February 21 revoked student pilot certificate No. S-57836, held by Juan Alberto Wirshing, Ponce, P. R., for piloting an aircraft carrying a passenger other than a certificated instructor in violation of the Civil Air Regulations.

ORDER No. 892: *Private pilot certificate of Oscar A. Grab, Jr., revoked.*

The Board on February 21 revoked private pilot certificate No. 61339, held by Oscar A. Grab, Jr., Glenview, Ill., for piloting an aircraft aerobatically while not equipped with a proper parachute and other violations of the Civil Air Regulations.

ORDER No. 893: *Private pilot certificate of O. M. Dodson suspended for 90 days.*

The Board on February 21 suspended for a period of 90 days, private pilot certificate No. 71342, held by O. M. Dod-

son, Durham, N. C., for piloting an aircraft carrying a passenger for hire in violation of the Civil Air Regulations.

ORDER No. 894: *Approved interlocking relationships.*

The Board on February 21 approved interlocking relationships included in the application of J. Carroll Cone and Pan American Airways Inc., and subsidiaries.

ORDER No. 895: *Granted Mayflower permission to withdraw its application for a certificate; consolidated applications of Mayflower and E. W. Wiggins.*

The Board on February 21 granted Mayflower Airlines permission to withdraw its application for a certificate of public convenience and necessity authorizing air transportation between Boston and Springfield, Mass.; and consolidated the application of Mayflower for an amendment to its "grandfather" certificate so as to authorize the transportation of mail between Boston and Nantucket, Mass., with the application of E. W. Wiggins Airways, Inc., for a certificate of public convenience and necessity authorizing air transportation between Providence, R. I., and Nantucket, Mass.

ORDER No. 896: *Pan American granted permission to transport official of the British Government.*

The Board on February 21 authorized Pan American Airways Co. (Del.) to transport Sir Arthur Richards, Governor of Jamaica, between Lisbon, Portugal, and Port of Spain, Trinidad, subject to space available.

ORDER No. 897: *Northwest granted permission for expeditions use of Missoula County Airport.*

The Board on February 21 granted Northwest Airlines, Inc., permission to inaugurate service to Missoula, Mont., located on route No. 3, through the use of the Missoula County Airport, on or about March 5, 1941.

ORDER No. 898: *Penn-Central granted permission for expeditions use of airports.*

The Board on February 21 granted Pennsylvania-Central Airlines Corporation permission to inaugurate service on or about February 25, 1941, at Charleston, W. Va., through the use of Wertz Field; at Chattanooga, Tenn., through the use of Chattanooga Airport; and Birmingham, Ala., through the use of Birmingham Airport.

ORDER No. 899: *Approved acquisition of Pan American Airways, Inc., of certain subsidiaries.*

The Board of December 31 approved the acquisition by Pan American Airways, Inc., of eight subsidiary companies from Pan American Airways Corporation through the transfer of stock; approved the transfer of stock of Marine Airport Corporation from Pan American Airways Co. (Del.) to Pan

American Airways, Inc.; approved merger of these subsidiaries with Pan American Airways, Inc., and the transfer of certificates of convenience and necessity held by the subsidiaries. Approved by the President February 20, 1941 (opinion and order — Docket 454).

ORDER No. 900: *Re applications of Eastern and T. W. A. for certificates of convenience and necessity.*

The Board on February 25 granted petition of the city of Lexington, Ky., the Counties of Fayette, Bourbon, Clark, Franklin, Jessamine, Scott, and Woodford, Ky., permission to intervene in applications of Eastern Air Lines, Inc., and Transcontinental & Western Air, Inc., for certificates of convenience and necessity authorizing air transportation between St. Louis, Mo., and Washington, D. C., via certain intermediate points; and denied petitions of Richmond (Ky.) Chamber of Commerce and Lexington (Ky.) Board of Commerce for permission to intervene.

ORDER No. 901: *Eastern granted permission for expeditions use of Malcolm McKinnon Field.*

The Board on February 26 granted Eastern Air Lines, Inc., permission to inaugurate service on or about March 1, 1941, at Brunswick, Ga., an intermediate point on route No. 6, through the use of Malcolm McKinnon Field.

## REGULATIONS

REGULATION No. 143: *The Board on February 21 adopted Amendment No. 95 of the Civil Air Regulations, "Redesignation of Certain Airway Traffic Control Areas and the Deletion of Nashville, Tenn., as a Control Zone of Intersection." The amendment follows:*

Effective 12:01 a.m., C. S. T., March 1, 1941, Part 60 of the Civil Air Regulations is amended as follows:

1. By deleting the words "Nashville, Tenn." in section 60.22.

2. By amending section 60.2403 to read as follows:

"60.2403. Green civil airway No. 3 airway traffic control areas (Los Angeles, Calif., to Washington, D. C.).—These portions of green civil airway No. 3: From the Los Angeles, Calif., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles south of the Phoenix, Ariz., radio range station; from a line extended at right angles across such airway through a point on the center line thereof 25 miles east of the Big Spring, Tex., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles southwest of the Little Rock, Ark., radio range station; from a line extended at right angles across such airway through a point on the center line thereof 25 miles northeast of the Jacks Creek, Tenn., radio range station, to the Washington Airport, Arlington, Va."

3. By amending section 60.2415 to read as follows:

"60.2415. Amber civil airway No. 6 airway traffic control areas (Jacksonville, Fla., to Buffalo, N. Y.).—These portions of amber civil airway No. 6: From a line extended at right angles across such airway through a point on the center line thereof 25 miles northwest of the Alma, Ga., radio range

station, to the Buffalo, N. Y., radio range station."

REGULATION No. 144: *The Board on February 21 adopted Amendment No. 96 of the Civil Air Regulations, "Redesignation of Certain Airway Control Areas and the Addition of Syracuse, N. Y., as a Control Zone of Intersection." The amendment follows:*

Effective 12:01 a.m., E. S. T., March 1, 1941, Part 60 of the Civil Air Regulations is amended as follows:

1. By amending section 60.22 to read as follows:

"60.22. Control zones of intersection designation.—The radio range station of the Administrator of Civil Aeronautics located at each of the following cities is designated as the center of a control zone of intersection: Albany, N. Y.; Albuquerque, N. Mex.; Amarillo, Tex.; Belgrade, Mont.; Boston, Mass.; Billings, Mont.; Bismarck, N. Dak.; Burlington, Vt.; Charleston, S. C.; Cheyenne, Wyo.; Concord, N. H.; Corpus Christi, Tex.; Daytona Beach, Fla.; Denver, Colo.; El Paso, Tex.; Fargo, N. Dak.; Helena, Mont.; Houston, Tex.; Huron, S. Dak.; Jackson, Miss.; Jacksonville, Fla.; Laramie, Wyo.; Memphis, Tenn.; Miami, Fla.; Millinocket, Maine; Minneapolis, Minn.; Nashville, Tenn.; Mobile, Ala.; New Orleans, La.; Oklahoma City, Okla.; Omaha, Neb.; San Antonio, Tex.; Spokane, Wash.; Syracuse, N. Y.; Tallahassee, Fla.; Tampa, Fla.; Tulsa, Okla.; White Hall, Mont.; Wichita, Kans."

2. By amending 60.2400 to read as follows:

"60.2400. Green civil airway No. 1 airway traffic control areas (Seattle, Wash., to Boston, Mass.).—Those portions of green civil airway No. 1: From Boeing Field, Seattle, Wash., to a line extended at right angles across such airway through a point on the center line thereof 25 miles east of Ellensburg, Wash.; from a line extended at right angles across such airway through a point on the center line thereof 25 miles southeast of the La Crosse, Wis., radio range station, to the intersection of the center line of the on course signal of the east leg of the Detroit, Mich. (Wayne County Airport), radio range and the United States-Canadian border; from the intersection of the center line of the on course signal of the west leg of the Buffalo, N. Y., radio range and the United States-Canadian border, to a line extended at right angles across such airway through a point on the center line thereof 25 miles east of the Buffalo, N. Y., radio range station."

3. By amending section 60.24317 to read as follows:

"60.24317. Blue civil airway No. 18 airway traffic control areas (Newark, New Jersey, to Syracuse, N. Y.).—No designation."

REGULATION No. 145: *The Board on February 21 adopted Amendment No. 97 of the Civil Air Regulations, "Logging of Flight Time by Second Pilots." The amendment follows:*

Effective April 1, 1941, section 61.523 of the Civil Air Regulations is amended to read as follows:

"61.523. Logging flight time.

"(a) A second pilot possessed of an airline transport pilot certificate and a type, weight and engine classification rating for the aircraft flown may log the total flight time during which he is on duty as second pilot. In addition, he may log all such flight time not logged previously which he acquired since May 5, 1932, during the period he held an aircraft rating for the aircraft flown, and either an airline transport pilot certificate, an airline pilot certificate, or a scheduled air transport rating:

"(b) A second pilot not possessed of an airline transport pilot certificate and a type, weight and engine classification rating for the aircraft flown may log 50% of the total actual flight time or he may log the full flight time during which he was the sole manipulator of the controls: *Provided*, That if such time be in excess of 50% of the total flight time, the time so flown by the second pilot shall be certified by the first pilot."

**REGULATION No. 146: The Board on February 21 adopted Amendment No. 98 of the Civil Air Regulations, "Proof of Wings and Vibration Test." The amendment follows:**

Effective April 1, 1941, Part 04, as amended, of the Civil Air Regulations is amended as follows:

1. By amending section 04.31 (not including any subsection thereof) to read as follows:

"04.31. *Proof of wings.*—The strength of stressed-skin wings shall be substantiated by load tests (sec. 04.302) or by combined structural analysis and tests (sec. 04.301). The torsional rigidity of the wings shall be within a range of values satisfactory for the prevention of flutter. Compliance with such torsional rigidity requirement shall be demonstrated by static tests or other methods acceptable to the Administrator."

2. By amending section 04.323 to read as follows:

"04.323. *Vibration tests.*—The natural frequencies of vibration of the wings, fuselage, and control surfaces shall be within such ranges of values as are satisfactory for the prevention of flutter. Compliance with this requirement shall be demonstrated by vibration tests or other methods acceptable to the Administrator."

**REGULATION No. 147: The Board on February 21 adopted Amendment No. 99 of the Civil Air Regulations, "Flight Area Limitations." The amendment follows:**

Effective April 1, 1941, section 20.56 of the Civil Air Regulations is amended to read as follows:

"20.56. *Flight area limitations.*

"(a) No student pilot shall make a solo flight outside of an area, in the vicinity of the operating base of his instructor, prescribed in writing by the person directly in charge of the landing area on which the instructor's operating base is located and approved by the local inspector of the Administrator, unless such student pilot has been certified for cross-country solo flights."

"(b) No student pilot certified for cross-country solo flights shall make a solo flight outside of the area, within a 50-mile radius of the operating base of his instructor, prescribed in writing by the person directly in charge of the landing area on which the instructor's operating base is located and approved by the local inspector of the Administrator: *Provided*, That a certificated flying school may prescribe in writing an area within a 100-mile radius of its operating base and, upon approval of said area by the local inspector of the Administrator, a student pilot enrolled in the flight curriculum of said school and certified for cross-country solo flights may fly solo within such area at the direction of said flying school."

"(c) No limited-commercial pilot shall pilot an aircraft carrying persons for hire outside of the area within a radius of 10 miles of a particular operating base named in his Airman Rating Record: *Provided*, That upon 10 days' notice to and approval by the Administrator, said area specified in such record may be changed to a different area."

"(d) No person shall operate an aircraft in solo flight outside the flight area specified in his pilot certificate or Airman Rating Record."

"(e) Flight area designations submitted to the local inspector under subsections (a) and (b) hereof shall be deemed approved by him unless the person submitting the designations is otherwise notified by the inspector within 15 days from the date of submission."

**REGULATION No. 148: The Board on February 21 adopted Amendment No. 100 of the Civil Air Regulations, "Requiring Altitude Recording Device." The amendment follows:**

Effective April 1, 1941, section 61.34 of the Civil Air Regulations is amended by adding a new subsection to read as follows:

"61.341. *Altitude recording device.*—No aircraft with a gross weight in excess of 10,000 pounds shall be operated in scheduled air

transportation of passengers after January 1, 1942, unless it is equipped with a device or devices which make a record of the altitude of the aircraft and the use of the aircraft's radio transmitter at all times during flight. This device shall be so constructed and installed as to afford substantial protection of the record in the event of an accident to the aircraft."

**REGULATION No. 149: The Board on February 25 adopted Amendment No. 101 of the Civil Air Regulations, "Amending Aeronautical Skill Requirements for Private and Commercial Pilot Certificates." The amendment follows:**

Effective March 11, 1941, the Civil Air Regulations are amended as follows:

1. By amending sections 2.127 to read as follows:

"2.127. *Aeronautical skill.*—Applicant shall satisfactorily demonstrate his ability to pilot aircraft in solo flight and, in addition to normal take-offs, turns, and landings, to perform satisfactorily the following maneuvers:

"(a) A series of three landings from an altitude not to exceed 1,000 feet, with engine throttled and a 180° turn, the aircraft touching the ground in normal landing attitude beyond and within 300 feet of a line or point designated by the examining inspector for the Administrator."

"(b) A spiral in each direction of not less than three full turns, in a banked attitude of not less than 60°, with engine throttled."

"(c) The following three maneuvers: (1) Three shallow figure eights either 'on pylon' or 'around pylon'; (2) three steep figure eights either 'on pylon' or 'around pylon'; and (3) one 720° power turn in each direction in a banked attitude of at least 60°. During each of these maneuvers the total variation in altitude shall not exceed 200 feet."

"(d) A right-hand and a left-hand spin, each of at least one full turn."

"(e) Coordination exercises, straight climbs, climbing turns, slips and emergency maneuvers such as simulated forced landings, recovery from stalls entered from both level and steeply banked attitudes, and such other maneuvers as the examining inspector for the Administrator may deem necessary and appropriate to demonstrate the competency of the applicant for the certificate or rating sought."

"(f) Under ordinary circumstances, none of the maneuvers provided for in section 2.127 shall be disregarded, but any such maneuver may be modified or eliminated by the examining inspector for the Administrator if such action is appropriate to the special characteristics of the aircraft used in the test. In any such case the applicant shall be limited to the particular makes and models, or general types, of aircraft specified in his Airman Rating Record."

2. By amending section 20.147 to read as follows:

"20.147. *Aeronautical skill.*—Same as in section 20.127 except as follows:

"(a) In the maneuvers required by section 20.127 (a), the aircraft shall touch the ground within 200 feet beyond the line or point designated."

"(b) In each of the maneuvers required by section 20.127 (c) the total variation in altitude shall not exceed 100 feet."

"(c) In the spins required by section 20.127 (d), the applicant shall perform a two-turn spin in each direction with an error of not more than plus or minus 10°."

3. By striking note 13 to section 20.60 (b) and substituting in lieu thereof the following:

"13. This section does not permit a person limited to the operation of aircraft incapable of spinning under sections 20.107 and 20.127 (f) to operate aircraft which are capable of spinning, nor does it permit persons, who, by reason of physical deficiencies or for other reasons, have been limited under section 20.124 to the operation of a particular make or model of aircraft or a general type of aircraft, to operate other makes or models or other general types."

"At his discretion, the examining inspector may ride with the applicant during these maneuvers or may permit a certificated instructor to do so."

4. By amending section 21.174 (e) to read as follows:

"21.174 (e). Sections 21.170 through 21.173 shall be applicable when the flight tests are conducted in aircraft of a gross weight in excess of 10,000 pounds; otherwise the pilot shall be required to demonstrate his aeronautical skill in accordance with section 20.147."

**REGULATION No. 150: The Board on February 25 adopted Amendment No. 102 of the Civil Air Regulations, "Revising the Regulations Governing Instrument Flight." The amendment follows:**

"Effective February 25, 1941, Parts 40, 60, and 61 of the Civil Air Regulations, as amended, are amended as follows:

1. By amending section 40.220 to read as follows:

"40.220. *Airway.*—(a) Applicant shall meet the requirements of section 40.200 for day operation, or of section 40.210 for night operation. In addition, for either day or night operation, applicant shall show that the proposed route is equipped with radio ranges (or equivalent facilities) adequate for safe air carrier operation, projecting courses over the proposed route. The applicant may show, in lieu of courses projected over the proposed route by such radio ranges or equivalent facilities, (1) that instrument navigation may be safely conducted over the proposed route by the use of radio direction finding equipment installed in the aircraft, and (2) that a practical alternate route, equipped with radio range stations (or equivalent facilities) projecting courses over such alternate route, exists between the terminals of the proposed route."

"(b) Applicant shall also show such other radio navigational aids (including radio markers) as are necessary for safe air carrier operation."

2. By amending section 40.310 to read as follows:

"40.310. *Airway.*—Applicant shall meet the requirements of section 40.200 and shall show that the proposed route is equipped with such obstruction lights as are necessary for safe air carrier operation at night. In addition, applicant shall show that the proposed route is equipped with such airway beacon lights and radio ranges (or equivalent facilities) as are necessary for safe air carrier operation."

3. Section 40.320 is amended to read as follows:

"40.320. *Airway.*—Same as 40.220."

4. By amending section 60.342 to read as follows:

"60.342. *Right side traffic.*—Aircraft operating along a civil airway shall keep to the right of the radio range course projected along the airway, or if no radio range course is projected along the airway, shall keep to the right of the center line of the airway except:

"(a) When impracticable for reasons of safety."

"(b) When otherwise instructed or authorized by an airway traffic control center of the Administrator."

"(c) In the case of inbound aircraft operating on instruments and using the on-course signal of the radio range."

"(d) When landing or taking off."

5. By amending section 60.572, not including sections 60.570 (a), 60.5721 (b), and 60.5722 (c), to read as follows:

"60.572. *Communications failure.*—In the event of the electrical or the mechanical failure of aircraft two-way communication equipment or in the event that the pilot does not receive radio signals sufficient to permit him to maintain instrument navigation, one of the following procedures shall be observed."

6. By amending section 61.720, not including sections 61.7200 (a), 61.7201 (b), and 61.7202 (c), to read as follows:

"61.720. *Communications failure.*—In the event of inability to maintain two-way communication with the appropriate communications station or in the event that the pilot does not receive radio signals sufficient to permit him to maintain instrument flight to any point cleared to or otherwise specified in the approved flight plan, one of the following procedures shall be observed:"

# Status of Parts of the Civil Air Regulations and Amendments

As of March 15, 1941

All persons affected by the Civil Air Regulations, including those preparing for examinations for certificates, may obtain required Parts of the Regulations from the Publications and Statistics Division, Civil Aeronautics Administration, Washington, D. C., without charge.

## ONLY PARTS NEEDED SUPPLIED FREE

For example, *pilots* are governed in general by Parts 01, 20, 60, and 98; *aircraft mechanics* by Parts 01, 04, 15, 18, 24, and Section 60.32; and *aircraft engine mechanics* by Parts 01, 04, 13, 14, 18, 24, and 98. It should be remembered that individuals are entitled to receive free of charge only those portions of the C. A. R. which directly govern the activity in which they are engaged.

## HOW TO OBTAIN PARTS, AMENDMENTS, AND MANUALS

Those persons not affected by the C. A. R., but desiring all or any part of the Regulations for other purposes, may

obtain them as follows: Those Parts on which a price is listed in the tabulation below are on sale by the Superintendent of Documents, U. S. Government Printing Office (shown as G. P. O. in table), Washington, D. C., and are not available for free distribution except as stated in the first paragraph.

Eventually, all Parts will be placed on sale; meanwhile, Parts not yet on sale (carrying remark in tabulation below "order from C. A. A. only") may be obtained without charge from the C. A. A. upon demonstration of valid interest on the applicant's part.

All amendments to the Civil Air Regulations, and notice of new Parts, are printed in the Official Actions section of the Civil Aeronautics Journal, as released.

The tabulation below carries in the right-hand column the numbers of all effective amendments to each Part issued subsequent to its publication. Parts ordered from C. A. A. include all

effective amendments, but when Parts are purchased from G. P. O. amendments must be requested separately from C. A. A.

Civil Aeronautics Manuals supplementing certain Parts with detailed interpretations of their respective provisions are issued. They are numbered the same as the Parts they supplement, and those Parts accompanied by Manuals carry appropriate notations. All Manuals are obtained from C. A. A. only.

## PARTS CANCELLED AND UNASSIGNED

Cancelled Parts 00. and 03. now incorporated in Part 01.; cancelled Part 23. now incorporated in Part 51.; and cancelled Part 25. now incorporated in Part 24. Parts 90.-96., inclusive, cancelled. All other Part numbers not shown are unassigned.

Bound volumes of the complete Civil Air Regulations are no longer available. Parts and amendments are punched for filing in loose-leaf binders.

PART No.	TITLE	DATE	REMARKS	PRICE	EFFECTIVE AMENDMENTS
<b>AIRCRAFT</b>					
01	Aircraft Registration and Airworthiness Certificates.	7-15-40	In stock at C. A. A. and on sale at G. P. O.	\$0.05	68, 75, 92 Administrator's Amend. No. 1.
02	Type and Production Certificates	7-15-40	In stock at C. A. A. and on sale at G. P. O.	.05	75.
04	Airplane Airworthiness (Manual 04, 7-1-38.)	5-31-38	Out of stock; to be available soon at C. A. A. and on sale at G. P. O.		601-A-1, 5, 14, 26, 28, 48, 56, 69, 75, 85, 98. <sup>1</sup>
13	Aircraft Engine Airworthiness (Manual not issued).	11-15-40	In stock; order from C. A. A. only		
14	Aircraft Propeller Airworthiness (Manual 14, 12-1-38).	11-15-40	In stock; order from C. A. A. only		
15	Aircraft Equipment Airworthiness (Manual 15, 7-1-38).	11-15-40	Out of stock; to be available soon from C. A. A. only		
16	Aircraft Radio Equipment Airworthiness (Manual not issued).	2-13-41	Out of stock; to be available soon at C. A. A. and on sale at G. P. O.		
18	Repair and Alteration of Aircraft (Manual 18, no date).	11-15-40	Out of stock; to be available soon from C. A. A. only		
<b>AIRMEN</b>					
20	Pilot Certificates	5- 1-40	In stock at C. A. A. and on sale at G. P. O.	.05	54, 63, 65, 67, 75, 82, 83, 87, 88, 99, <sup>1</sup> 101.
21	Airline Transport Pilot Rating	11-15-40	Out of stock; to be available soon from C. A. A. only		87, 101.
24	Mechanic Certificates	5- 1-40	In stock at C. A. A. and on sale at G. P. O.	.05	44, 61, 73, 75, 87.
26	Air-Traffic Control-Tower Operator Certificates	10-4-40	In stock at C. A. A. and on sale at G. P. O.	.05	87.
27	Aircraft Dispatcher Certificates	7-15-40	In stock at C. A. A. and on sale at G. P. O.	.05	74, 75, 87.
<b>AIR CARRIERS</b>					
40	Air Carrier Operating Certification (Interstate)	11-1-40	In stock at C. A. A. and on sale at G. P. O.	.05	85, 89, 102.
<b>AIR AGENCIES</b>					
50	Flying School Rating (Manual 50, 12-40)	11-1-40	Out of stock at C. A. A. but on sale at G. P. O.	.05	87.
51	Ground Instructor Rating	5-1-40	In stock at C. A. A. and on sale at G. P. O.	.05	75, 87.
52	Repair Station Rating (Manual of 2-41 out of stock).	5-1-40	Out of stock at C. A. A., but on sale at G. P. O.	.05	75, 84, 87.
53	Mechanic School Rating (Manual 53, 5-40)	9-15-40	In stock at C. A. A. and on sale at G. P. O.	.05	75, 87.
<b>AIR NAVIGATION</b>					
60	Air Traffic Rules (Manual 60; Part 1, 12-1-40; Part 2, 8-1-40; Part 3, 12-1-40).	10-4-40	In stock at C. A. A. and on sale at G. P. O.	.10	76, 77, 80, 86, 90, 93, 95, 96, 102.
61	Scheduled Air Carrier Rules (Interstate)	5-31-38	Out of stock; to be available soon at C. A. A. and on sale at G. P. O.		601-A-1, 51, 52, 75, 91, 94, <sup>2</sup> 97, <sup>1</sup> 100, <sup>1</sup> 102, 103.
<b>MISCELLANEOUS</b>					
98	Definitions	11-15-40	In stock; order from C. A. A. only		
99	Mode of Citation of Regulation	11-15-40	In stock; order from C. A. A. only		

<sup>1</sup> Effective 4-1-41.

<sup>2</sup> Effective 5-1-41.



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